



## **DEVELOPING A COMMUNICATIVE PLANNING APPROACH TO RESOLVE LAND USE CONFLICTS IN JELUTONG AREA OF GEORGETOWN, PENANG, MALAYSIA**

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### **Abstract**

This paper examines the urban land use conflict cases which have generated several environmental problems in a small area of Jelutong in Georgetown, Malaysia. Three cases of land use conflicts were identified in the area. The first case was the location of two industries adjacent to a residential area; the second involved the location of a factory within a river reserve area; and the third case was the location of a bus workshop within surrounding residential land uses. The conflicts of interest and spatial/environmental implications of each of the conflict cases were analyzed. Based on the findings, the paper also identifies the reasons for the occurrence of those conflicts. Five alternative approaches were developed, with a recommendation to adopt a communicative approach (consensus building) to deal with the environmental problems and improve the living environment of the area.

**Keywords:** Urban Land Use Conflict, Communicative Approach, Environmental Implications, Living Environment, Conflict Resolution

### **INTRODUCTION**

Recently, many developing countries in Asia are experiencing a process of rapid urban growth which often leads to urban land use conflicts<sup>2</sup> and provide

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<sup>2</sup> Refers to incompatible land uses due to involvement of multiple parties. Besides being a physical phenomenon, the concept has spatial /environmental implications. The

greater challenges to the town planners in resolving these conflicts. Generally, a process of land use conflict occurs due to incompatibility of land uses, because the land use game is rife with opportunities for conflict (Kaiser et.al. 1995:460) and when the market forces alone determine the land uses of a particular area (Roo and Miller, 2000).

The process of urbanization in Georgetown during the 1960s and 1970s was quite fast. As a result, many conflicting land uses developed in the city. In fact, the issue of land use conflicts has been mentioned in the Draft Structure Plan (Amendment) of MPPP 2000, in the following words:

*“There are serious land use conflict cases within strategic areas of Georgetown. For instance, the Small and Medium Industry (SMI) in Jelutong is located adjacent to the residential area...Even though these issues had been identified in the Structure Plan of MPPP 1987, there are no specific actions being taken till today.”* (Draft Structure Plan (Amendment) of MPPP 2000, p.17-5)

Therefore, a study to examine the land use conflict cases in the Jelutong area of Georgetown is essential for the sustainable urban development of the city.

## **THEORETICAL PERSPECTIVE**

Communicative planning was developed as an alternative for the rational comprehensive planning. The failure of the rational planning approach and the necessary role of communication in environmental planning plus new changes in societies have led planning theorists towards new approaches in which communicative planning has a major place (Asgary and Saki, 1995, p.1). This planning paradigm, with its emphasis on participation as a value, has its roots in the Habermas (1984) communication theory of society which states that interpersonal or mutual understanding through the communicative activities is a key factor to solving social problems. To increase such mutual understanding Habermas develops the ordinary, common sense communication of mutual understanding and consensus that makes any shared knowledge possible. The communication in this term is not only transmission of information but it contains several other important factors such as moral values. Habermas argues that planning requires the consent that grows from the process of collective

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situation also involves clashes between value judgements relating to one or more mutually influential aspects or factors experienced as such by one or more parties (Roo, 2003, p.7).

criticism, not from silence or a party line (Forester, 1980). Healey (1994) has made some contributions to our understanding of communicative theory in planning. According to Healey (1992) planning should be an interactive and interpretative process which focuses on searching for achievable levels of mutual understanding and is a participatory based discussions.

Case studies and pilot practices have provided some optimistic results about the application of this approach by highlighting the effectiveness and importance of communicative actions in planning.<sup>3</sup> Forester (1989) applied Habermasian ideas to the study of planning practice in a planning agency. He connected the concept of communicative rationality to planning theory and showed how dialogue can be used to overcome repressive political bounds, such as interpersonal manipulation and structural misinformation, on planning. Many studies in environmental planning have found that within the new forms of societies, planning cannot go ahead without going toward a more participatory and democratic approach (Healey, 1994).

Communicative planning's scope is wide and it can be applied to conflict situations such as those arising from land use disputes. In land use conflicts, planners can apply the communicative approach and can design conflict management approach by considering three linked factors: (a) the negotiation technique, (b) the negotiation forum and (c) the intensity of conflict (Kaiser, et.al., 1995: 462). Susskind and Cruikshank (1987) identified a range of dispute resolution techniques – (a) direct or assisted negotiation, (b) facilitation by a third party, (c) mediation by third party, and (d) arbitration by an arbitrator. Dispute resolution forums, the types of settings in which conflicts are addressed, range from informal meetings among planners, developers and citizens to hearings by judges or attorneys. Godschalk (1992: 369) identifies three different intensity levels of conflicts – (a) issues, moderate level of disagreement, (b) disputes, unresolved issues, and (c) impasses, stalemated disputes.

Consensus<sup>4</sup> planning (CP) is a mode of the communicative planning and it is based on such approaches as collaboration, negotiation and persuasion, for building consensus for decision. The main characteristic of CP is that planning

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<sup>3</sup> For case studies with application of communicative planning, see International Society of Planners (1995). *Adaptation and Mediation in Urban Planning – Working Paper Book*. Australia: International Society of City and Regional Planners (ISoCaRP). For Caribbean case studies, see Pugh, J. and R.B. Potter (eds) (2003). *Participatory Planning in the Caribbean -Lessons from Practice*. Aldershot: Ashgate Publishing Ltd.

<sup>4</sup> Consensus refers to a general agreement of opinion or collective opinion in a certain group (Woltjer, 2000, p.6).

products such as public works are created based on opinions. To achieve this, actors with an interest that bears relation to the planning problem under consideration, participate in some co-operative, negotiating or will-shaping process. However, the approach pays equal attention to both the process and the product. The way things are decided is as important as the substantive outcome of decision making. (Woltjer, 2000, p.7).

Woltjer (2000, p.25-6) identified three types of consensus planning: (a) CP as a process of collaboration and learning; (b) CP as a process of bargaining and negotiations; and (c) CP as a process of persuasion and will shaping. In reality, the types may overlap and their applications depend on the nature of the planning problems or issues. At the empirical level, Woltjer (2000) has examined a few cases to get an idea of the possible variation in types of CP for infrastructure projects in Netherlands.

Consensus planning as a mode of communicative planning approach has wide potentials to be applied to resolve many planning problems and issues. The present study intends to harness this potential in resolving the three land use conflict cases that have cropped up in Georgetown.

## **OBJECTIVES AND METHODOLOGY**

In addressing the land use conflict issues of the Jelutong area of Georgetown, the following objectives have been formulated:

- Study the existing land use and identify the prevailing land use conflict cases;
- Identify the conflict parties and conflict interests in each conflict case;
- Analyze the spatial/environmental implications of each land conflict case;
- Determine the factors responsible for the occurrences of the land use conflicts; and
- Develop a consensus planning approach for resolving the land use conflicts.

In order to study the land use conflicts, Jalan Haji Hashim Imam of Jelutong area of Georgetown was selected after reviewing the Draft Structure Plan (Amendment) of MPPP 2000, site observation and also consultation with the Town Planner of MPPP. A four-week long field survey was conducted in 2003 and primary and secondary data were collected. The primary data included the site inventory, observation and photographs, which mainly helped to update the existing land uses and also identification of land use conflict cases. The secondary data included collection of information/reports from MPPP such as

Land Use Plan, Technical Report of Draft Structure plan (Amendment) MPPP 2000, Policy Plan (*Pelan Dasar*) of MPPP, committed development and also the environmental guidelines from DOE. Besides these, an interview was conducted with the local authority and conflict parties. Two main policies and guidelines – Policy Plan<sup>5</sup> for Planning and Development Control of MPPP, and the Department of Environment (DOE) Guidelines for the Siting and Zoning of Industries<sup>6</sup>, were used as tools to identify and analyse the land use conflicts in the study area.

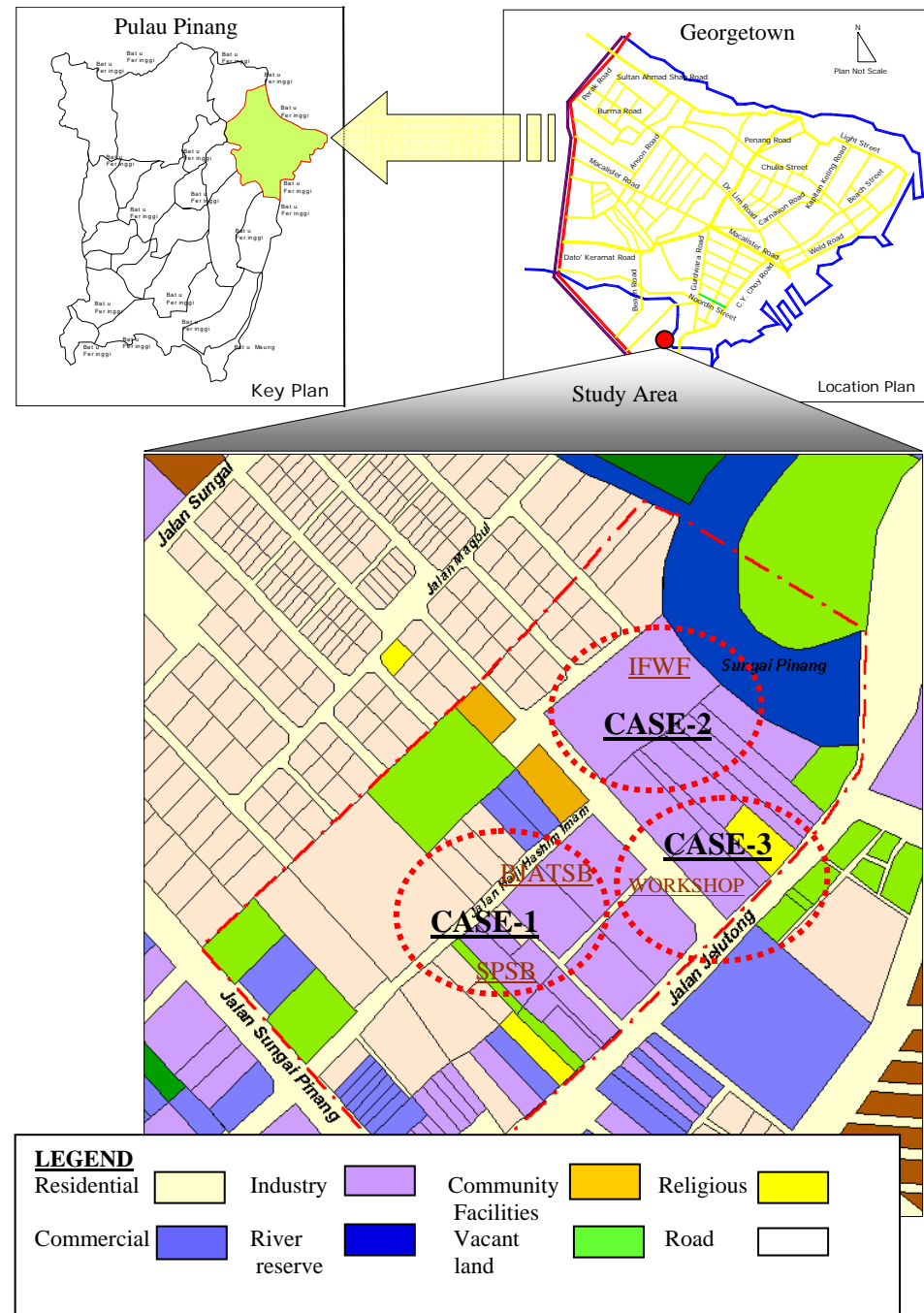
## THE STUDY AREA

The study area, Jelutong, is located in Section 9W of Georgetown, the state capital of Pulau Pinang which is situated in the northern region of Peninsular Malaysia (Figure 1). It is a suburb strategically located at a distance of 5 km to the south west of the City Centre and between the City Centre and the Penang Bridge at the south of Georgetown. The study area is connected with two major distributor roads - Jalan Jelutong and Jalan Sungai Pinang. There are many Small and Medium Scale Industries located in Jelutong that has shaped its particular enclave. Many of these industrial premises are located at inappropriate sites thereby creating planning problems like land use conflicts and environmental pollution in the area. The study site constitutes of the land uses around Jalan Haji Hashim Imam. The Municipal Council of Penang Island (MPPP) is the Local Planning Authority whose jurisdiction covers the whole of Penang Island with an approximate area of 293 km<sup>2</sup>.

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<sup>5</sup> The Policy Plan for Planning and Development Control of MPPP provide a specific control on future land use and land development, including the change of land use and building activities within MPPP area. This Policy Plan is also supported by several guidelines that outline control criteria such as housing density, type of building, height, setback, design and other planning aspects.

<sup>6</sup> The DOE guidelines for the siting and zoning of industries cover industry types with related descriptions and standard requirements along with their buffer zones (DOE 1996).



## EXISTING LAND USE OF THE STUDY AREA

The total land of the study site is 15.95 acres or 64,552 m<sup>2</sup>. The dominant land use of the area as Figure 2 shows is industry which comprises of 19,965 m<sup>2</sup> or 30.93 percent of total area. The second dominant land use is residential which occupies 15,965 m<sup>2</sup> (24.73 percent), followed by road - 8,889 m<sup>2</sup> (13.77 percent). Vacant land covers an area of 7,726 m<sup>2</sup> (11.97 percent) and river reserve occupies nearly 5,871 m<sup>2</sup> (9.1 percent). While commercial land use covers 3,895 m<sup>2</sup> (6.03 percent), community facilities occupy 1,213 m<sup>2</sup> (1.88 percent). Finally, religious institutions occupy only 1.59 percent or approximately 1,028 m<sup>2</sup>.

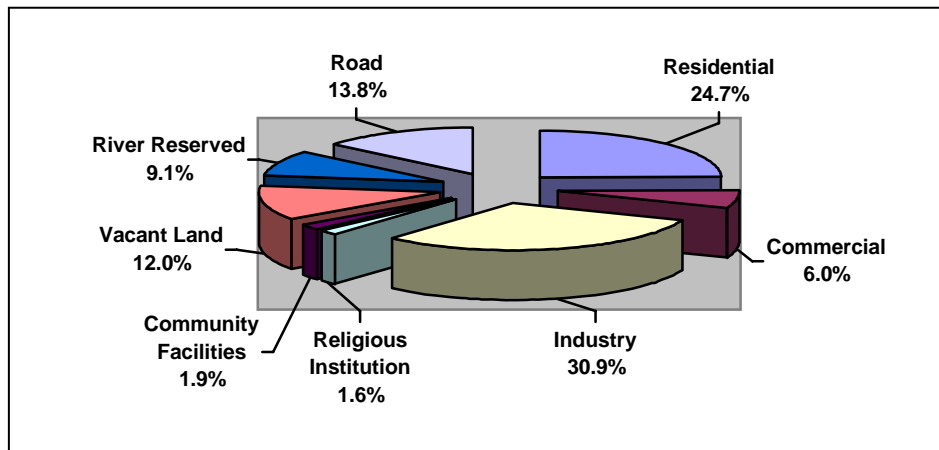


Figure 2: Land use pattern of the study area, 2003.

## IDENTIFICATION AND ANALYSIS OF LAND USE CONFLICT CASES

Three significant land use conflict cases were identified in the study area. These are – (a) the location of two industries in close proximity to a residential area, (b) the location of an industrial premise close to river reserve, (c) the location of a bus workshop near to a residential area (Figure 1).

### ***Case 1: Land Use Conflict due to Location of Industries close to a Residential Area***

Two medium-sized industries – Ban Joo Aun Trading Sdn. Bhd. (BJATSB), located on lots 670 and 680, with an area of 2,162 m<sup>2</sup> and Sun Printing Sdn.

Bhd (SPSB), covering lots 99, 100, 101, 973, and 974, with an area of 2,254 m<sup>2</sup>, are located in close proximity to a residential area. The residential area is situated opposite to those industries but separated by Jalan Haji Hashim, a 7-metre local road. BJATSB processes used materials and its main entrance is from the busy road of Jalan Jelutong while the rear entrance is from Jalan Haji Hashim Imam. SPSB is a printing company and it is located in front of Jalan Jelutong while beside it is Jalan Haji Hashim Imam (Figure 1).

Local Authority (MPPP), DOE Penang, the two factories and the residents of Jalan Haji Hashim Imam, are the parties involved in this land use conflict case. Only residential use is permitted in Village Housing Zone and industries are not permitted in the area.<sup>7</sup> Thus, the location of both industries near to the residential area is not appropriate. However, it was argued that these industries had existed before the formulation and enforcement of the MPPP Policy Plan from 1989. This seems valid for BJATSB that had existed in the area for about 30 years, but not for SPSB which began its operation in 1999. According to DOE, the minimum buffer zones between residential area and small and medium scale industries are 30 metres and 250 metres, respectively<sup>8</sup>.

### ***Conflicts of Interests***

Two main conflicts of interests - economic and environmental are evident in this case. Both industries operate in the area because they stand to make profits. The residents in the area have an interest in creating a better living environment and they are also concerned about safety issues as a consequence of living close to industries. Finally, the public authorities are concerned with the preservation of environment and the compliance of industries with the environmental quality standards. Physical conflicts in the form of visual blight and traffic safety also exist in the area due to the environmental problems.

### ***Spatial/Environmental Implications of the Conflict***

The land use conflict case has generated several environmental problems in the form of air, water, soil and noise pollutions, visual blights and safety issues on the affected community.

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<sup>7</sup> According to the Schedule 2: Zones of Planning Control of Policy Plan of MPPP, 1989.

<sup>8</sup> Guidelines for the Siting and Zoning of Industries, DOE, 1996.





Photo C1.a: Filthy condition within the factory



Photo C1.b: Clogged drain and zinc fence

**Case 2: Land Use Conflict due to Location of Factory Adjacent to Environmentally Sensitive Area (River Reserve)**

This case involves the location of a factory adjacent to the Sungai Pinang river reserve. The factory is named International Footwear (Pg) Sdn. Bhd. and it used to manufacture 'Pallas' brand foot wear. This covers lots 109 and 482 with an area of 9,421 m<sup>2</sup> which is 47.2 percent of total industrial acreage of the study site (see Figure 1). The factory has been abandoned since 2002. The Sungai Pinang river is classified as a 'polluted' river and it does not meet up with Class IV Standard of the water quality index<sup>9</sup>. The pollutants of Sungai Pinang mostly come from the wastes discharged from sources both domestic and industries.

The Local Authority (MPPP), DOE Penang, Department of Irrigation and Drainage (DID) Penang, Footwear factory, *Kariah* Committee of Masjid Maqbul, and the residents of Jalan Maqbul and part of Jalan Haji Hashim Imam, are the parties involved in this land use conflict case. About one-fifth of the factory area has encroached on the river bank. No development except for government and community facilities is permitted in the river reserve zone<sup>10</sup>. Nevertheless, the location of the abandoned factory complies with the permitted zoning due to the fact that the factory was operating before the formulation of the Policy Plan. Usually, a medium scale industry should be located either in a designated industrial estate or zone or it should have a buffer of 250 metres from other land uses<sup>11</sup>. But the factory being located in the river reserve does

<sup>9</sup> According to the Technical Report of DSPMPPP 2000.

<sup>10</sup> Referring to the Policy Plan of MPPP, 1989.

<sup>11</sup> Referring to the Guidelines for the Siting and Zoning of Industries, DOE, 1996.

not comply with the guideline; rather, it has created land use conflicts with the residential area of Jalan Maqbul, which is separated by a 5-metre road.

### ***Conflicts of Interests***

Two types of conflicts of interests – economic and environmental, are evident in this case. Even though the factory is abandoned, the industrial site still has an interest to maintain its land use status. In fact, the owner has an interest in earning income by renting the premise to other industries. MPPP, DOE and DID have their interests in controlling and preventing pollution in the area. On the other hand, the *Kariah* Committee of Masjid Maqbul and the residents are interested in quality living environment of the area.

### ***Spatial/Environmental Implications of the Conflict***

The conflict case holds potential environmental problems due to abandoned factory/land, along with the visual blight and safety issues faced by the neighbouring community.



Photo C2.a: Zinc *perimeter fencing* – visual blight.



Photo C2.b: Factory and polluted river.

### ***Case 3: Land Use Conflict due to Location of Bus Workshop nearer to a Residential Area***

The third land use conflict case involves the location of a bus workshop within the surrounding land uses. The workshop is strategically located on lot 106 with an area of 963 m<sup>2</sup> adjacent to the main road – Jalan Jelutong and in close proximity to the residential areas at Jalan Haji Hashim Imam and Jalan Maqbul (sees Figure 1). It is a rental premise and the tenant is the Konsortium Bas Ekspres Semenanjung Sdn. Bhd. (KBESSB). The workshop has been in operation since 2001 and it provides a number of services such as vehicle

repairs, fuel loading and washing. Furthermore, the workshop also functions as a depot for all express buses of the company. Thus, the workshop contributes to road congestion and environmental pollution and also threatens the safety of neighbouring residents.

This land use conflict case involves five main parties – the residents of Jalan Haji Hashim and Jalan Jelutong, the morning market operators and visitors, KBESSB, MPPP<sup>12</sup>, and DOE. The workshop is classified as an industrial activity and it complies with the permitted future land use of the area. MPPP has designated the area as industrial mainly because of the development pressure that exists in the area. Being located at a distance of 50 metres from the surrounding residential areas, the workshop is obviously complying with the DOE guidelines<sup>13</sup>. However, it was noticed that the workshop did not adopt proper measures to treat the waste water and therefore it failed to comply with the standard requirements for industrial discharges and emissions of the Environmental Quality Act, 1974.

### ***Conflicts of Interests***

Two types of conflicts of interests – economic and environmental have been identified in this land use conflict case. The bus company has a major interest to maintain the workshop at the existing location because it is strategic and convenient. However, MPPP representing the public interest are struggling to resolve the traffic congestion at major roads of Penang Island including Jalan Jelutong. DOE is concerned with the level of pollution that is mainly contributed by various industrial activities in the urban area. The residents are concerned about their safety and risk of accidents from the movement of buses due to the location of the workshop there.

### ***Spatial/Environmental Implications of the Conflict***

The environmental impacts of this conflict include traffic congestion, air and water pollution and safety issues.

Table 1 provides a comparative analysis of the three land use conflict cases within the framework of the parties involved, conflict of interest, nature of conflict and environmental impacts. Basically, the three conflict cases involve

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<sup>12</sup> One of the main functions of MPPP is regulating building control within its jurisdiction area as provided by the Street, Drainage and Building Act 1974 (Act 133). The main purpose of building control is to ensure safety of structures, standards of size and space and also healthy and sanitary habitation.

<sup>13</sup> According to the DOE Guidelines for the Siting and Zoning of Industries, the minimum buffer zone for a light scale industry is 30 metres.

both public and private parties; their occurrences are dominated by strong economic interests; however, their environmental impacts are wide-ranging.



Photo C3.a: Morning market and bus



Photo C3.b: Buses creating environmental

Table 1: Comparative analysis of the three land use conflict cases.

CONFLICT CASES	Parties Involved	Conflict of Interests	Nature of Conflict	Impacts
<b>CASE 1:</b> Location of industries close to residential area. (Lots: 670, 680, 99-101, 973-4).	1. Private sector (industries); 2. Public sector (MPPP, DOE); and 3. Residents	1. Economic 2. Environment 3. Living environment 4. Safety	Economic Spatial Physical ↓ ↓ ↓ ENVIRONMENTAL	1. Air pollution 2. Water, soil and noise pollution 3. Visual blight, safety issues
<b>CASE 2:</b> Location of factory adjacent to river reserve. (Lots: 109, 482)	1. Private sector (industries); 2. Public sector (MPPP, DOE, DID); 3. Residents; 4. Masjid Committee	1. Economic 2. Environment 3. Living environment 4. Conservation of Masjid	Economic Spatial Physical ↓ ↓ ↓ ENVIRONMENTAL	1. Environmental hazards. 2. Water, soil and noise pollution. 3. Visual blight, safety issues.
<b>CASE 3:</b> Location of bus workshop nearer to residential area. (Lot: 106)	1. Private sector (Bus workshop); 2. Public sector (MPPP, DOE); 3. Residents, 4. Market operators & visitors	1. Economic 2. Environment 3. Traffic safety 4. Living environment	Economic Spatial Physical ↓ ↓ ↓ ENVIRONMENTAL	1. Air and water pollution. 2. Environmental hazards. 3. Traffic congestion, safety issues.

(Source: Authors' analysis based on field survey data collected in 2003)

## REASONS FOR THE CONFLICTS

Based on the analysis of the three conflict cases, the following reasons appear responsible for the existence of land use conflicts in the area:

**a. *Local Plan of MPPP is still under preparation***

From the analysis it appears that the main source of conflict is derived from the incompatibility of land uses between industries and residential areas. This situation has occurred because the Policy Plan of MPPP only provides general land use and development guidelines. Therefore, there is a serious need for a Local Plan to be prepared and gazetted in order to provide a comprehensive and effective control on future land use and development within MPPP area. The delay of its preparation is due to the recent amendment of Act 172 that requires the Local Plan to be in compliance with the State Structure Plan which is still under preparation<sup>14</sup>.

**b. *Lack of Co-ordination among Public Agencies***

Incompatibility of industrial land use within the surrounding residential environment is the prime reason for the occurrence of land use conflicts in the study area. Although the first and second cases comply with the land use zoning of MPPP, both cases do not comply with the minimum buffer zone requirements of the DOE. It was reported that the DOE guidelines were prepared after the Policy Plan of MPPP and as a result it has not been incorporated in the Policy Plan. This indicates lack of coordination between public agencies.

**c. *Delay in enforcing statutory laws***

The monitoring and enforcement of development activities involve a longer period of time, and it eventually leads to prosecution action in the courts<sup>15</sup>. Usually, a license or permit is issued by a local authority to a business or industrial operator for a period of one year and it must be renewed. Therefore, as a control tool, the license renewal is more stringent and effective compared to planning or building control. In addition, MPPP

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<sup>14</sup> Referring to Section 8 and 12, Town and Country Planning Act 1976 (Act A1129).

<sup>15</sup> This includes complying with statutory laws such as Town and Country Planning Act 1976 (Act 172) and the Street, Drainage and Building Act 1974 (Act 133) in particular to building control as prescribed under Section 70. On the other hand, referring to the Section 3 of the Trades, Businesses and Industries By-Laws of MPPP 1991 stated the requirement for industrial operators to obtain license from MPPP.

can serve a requisition notice to the landowner if it is not satisfied with the present use of land<sup>16</sup>.

**d. *Lack of Network Relationship among Conflict Parties***

All the three conflict cases involve broadly three parties – (a) public agencies like MPPP, DOE, DID; (b) private sector; and (c) the residents. The network relationship within each party exists but there is no platform for cross-party networks in order to resolve the conflict situations.

## **POLICY OPTIONS**

Land use conflicts can be resolved through an effective conflict management. The conflict management begins with the identification of alternatives and followed by a description of shift and power, which could guide the formulation of conflict resolutions. Therefore, the paper proposes five alternative approaches which can be directed at facilitating the overall conflict resolution process.

**a. *'Do Nothing'***

This approach is adopted when the local authority has no intention to intervene in the conflict situation. In such a case, the land use conflicts will be resolved by the market force only. However, this may lead to further deterioration of the living environment.

**b. *Physical Measures***

Physical measures refer to long-term actions taken by the local authority (MPPP) to resolve the land use conflicts. However, this approach has two main disadvantages – it is time consuming and costly. For example, a road widening project of Jalan Haji Hashim Imam from 7 to 17 metres will temporarily mitigate some of the land use conflicts in the area but the project will be very expensive.

**c. *Relocation of Factories in Industrial Areas***

MPPP is committed to promote a conducive environment for living, working and recreation as outlined in the goal of DSPMPPP 2000. In order

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<sup>16</sup> Under Section 30 of TCPA 1976 (Act 172), MPPP with the approval of the State Authority could use its power to serve requisition notice to land owner under certain circumstances.

to realize this goal aimed at reducing land use conflicts, MPPP can encourage the four industries to be relocated at the designated industrial zones and convert these spaces into recreational activities. This would require MPPP to go for land acquisition for public purposes and this will be very costly because MPPP must offer considerable amount of compensation as required<sup>17</sup>.

***d. Formation of Resident Association and Dialogue***

In order to protect their interest and rights, the residents should form an association. The main task of the association is to act as a representative body to carry on dialogues with the public agencies and the industry owners. The dialogue can be an open dialogue involving all conflict parties and interested parties such as NGO and academicians, or a closed dialogue that only involves the conflict parties. However, the success of this approach to resolve land conflicts is uncertain.

***e. Consensus Building***

In order to achieve a firm conflict resolution and a 'win-win' situation, MPPP can initiate a consensus conflict resolution with all the parties. A consensus building is a compromise approach of decision making where individuals or organizations with interests can communicate to reach an agreement which is far from the formal planning approach. Consensus exists when all participants find the result is acceptable and it is not necessary for the participants to agree on every aspect of the resolution.

For the land use conflict cases in the study area, MPPP can act as a mediator and initiate a dialogue session with the affected/ interested parties. In this case, a 'persuasion' and 'bargaining' rather than the 'coercion' and 'debate' technique should be pursued and a closed dialogue should be encouraged. For the first land use conflict case, MPPP's initiative to consensus building can lead to a decision in which the printing company (SPSB) should be agreed to relocation outside the area and the processing factory (SAJTSB) can continue operation after it conforms to certain environmental improvement conditions, including allowing MPPP to create a minimum buffer zone for which SAJTSB has to sacrifice some land for widening the road.

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<sup>17</sup> The use of power by MPPP is in line with Section 3 of Land Acquisition Act 1960 (Act 486), provided that the land acquisition is carried out for public purposes.

For the second land use conflict case, MPPP's initiative to consensus building can lead to a decision in which case the industrial premise will be acquired by MPPP<sup>18</sup> and a new industrial site can be offered at the PDC Industrial Estates at Bayan Lepas. The industrial land acquired can be used for constructing a local park by MPPP. Thus, with the relocation of the factory, the land use conflicts can be resolved towards creating a better living environment in the area.

Finally, the third land use conflict case can be resolved through a consensus building leading to a decision in which case the bus workshop can retain its operation at the existing location but it has to adopt a proper mechanism to treat the waste water discharge immediately as laid down by DOE and also improve its traffic and safety management. MPPP can also help remove the 'morning market' from its current location nearer to the workshop entrance to a location at Jalan Haji Hashim Imam. These consensus decisions will help improve the living environment of the area.

## **CONCLUSION**

This paper has examined and analysed the reasons for the existence of three land use conflict cases that have occurred in the Jelutong area of Georgetown due to the location of industries adjacent to the residential areas. Each of the land use conflict situations has generated several environmental impacts which require resolution by adopting an appropriate approach. Several alternative approaches to resolve the land use conflicts and mitigate the environmental impacts have been suggested and evaluated with a consensus planning approach which appears to be most feasible mode of communicative approach. Nevertheless, each land use conflict case requires a different type of conflict resolution through consensus building. In short, a conflict resolution should be designed according to a specific conflict case. However, in order to achieve a consensus conflict resolution, it is important to acknowledge that the resolution may not fully satisfy the interest of each conflict party due to the fact that a consensus conflict resolution may insist on a change in attitude and principle of each party. MPPP as a Local Planning Authority will be effective in any land use conflict situation. With a good co-operation from the conflicting agencies, MPPP can function as a mediator effectively.

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<sup>18</sup> The action of MPPP shall be in line with the provision of TCPA 1976 (Act 172) and related procedures.



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